REMARKS

Independent claims 54, 73, 93 and 94 are amended to include the limitation that the text object comprises "a text node tree" while claims 95-102 and 104-106 are canceled, without prejudice or disclaimer of the subject matter therein canceled.

The Applicant thanks the Examiner for indicating that claims 95 and 96 are allowed while claims 67, 68, 85 and 86 would be allowable if appropriately amended. In accordance with this indication, the subject matter of objected to claims 67, 68, 85 and 86 is rewritten as new independent claims 107, 108, 109 and 110, respectively, and these newly entered independent claims are now believed to be allowable as well. As the Applicant previously paid for a total of ten (10) independent claims, the Applicant believes no further fees are due with respect to filing new independent claims 107, 108, 109 and 110.

Claims 54-59, 73-78, 93, 94 and 97-106 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Gupta et al. `258 while claims 60-66, 68-72, 79-84 87-92 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Gupta et al. `258 in view of Chuah et al. '534. The Applicant acknowledges and respectfully traverses the raised obviousness rejections in view of the following remarks.

It is respectfully submitted that the invention, as claimed, is novel and inventive over the disclosures of Gupta `258 and Chuah et al. `534.

The present invention is aimed at providing a method and system which is able to handle "free-format data". Free-format data is data which is stored in a computer system, preferably in a database, in an _unstructured_ form. There are many examples of this type of data. One good illustration is the one which is used in the application specification of address data. Address data usually consists of a number of elements (see Fig. 2 of the patent specification drawings). For example, 12 Pitt Street, North Sydney, consists of 4 elements, namely the street number (e.g. 12); the street name (e.g. Pitt)l; street type (e.g. Street-alternatively it could be "Road", for example); and town (e.g. North Sydney) which in this case consists of two elements, being geographical term (e.g. North) and a name (e.g. Sydney).

In many databases presently in existence, all the elements of this address data would be stored in a single field, labeled "Address". "Normal" database operations can only be carried out on a field by field basis so it is impossible, with present database access and manipulation techniques, to access and manipulate separately elements of a free-format data such as an address stored in a single field. The only way that these elements can be accessed is by accessing the entire address as a whole via the field.

As much data that humanity deals with is most conveniently stored as free-format data, this leads to limitations on the capabilities of presently available databases.

The present invention addresses this problem by creating a "text object" which encapsulates additional data relating to the free-format data in the form of a "text node tree". The text node tree includes pointers to the original free-format text.

An illustration of one embodiment of a text node tree in accordance with the present invention is given in Fig. 3 of the drawings of the application specification. The text node tree, in this embodiment, includes a plurality of component nodes 302-312 having branches (e.g. 313), the component nodes being positioned in a predetermined hierarchy. In particular, see page 12 of the application specification, lines 8-12, and page 27, line 24 to page 38, line 25, for discussion of an example text node tree.

A text node tree is able to represent:

• language constructs at every level; and

• multiple interpretations of the free-format data.

This allows maintenance of the free-format data "in position" without it being necessary to move it from its database or provide further fields to put the free-format data in, while still allowing all operations without any external database. The additional data in the form of the text object structured a text node tree is used to access the free-format data and find out about the free-format data. This additional data is maintained.

Gupta '258 and Chuah et al. '534, however, while addressing similar problems as the present invention, are focused on taking the free-format text and putting it into individual data

fields (tuples) of predetermined database tables. Once the database tables have been populated, the intermediate data created and used during the transformation process is no longer referred to. On the other hand, the present invention does not populate new database tables. We maintain the free-format data as it is, e.g., in its original database table and keep the additional data (the text node tree) and use it for enquiries about the free-format data.

When compared to Gupta et al. `258 and Chuah et al. 534, the presently claimed invention has four unique benefits:

1. It can store and manage free-format information in any structure (the presently claimed invention is not limited by structure of the database);

2. It can match at any level in the text node tree;

3. It can match against many interpretations of ambiguous data; and

4. It can modify sub-components of the information at any level in the syntax tree.

Examples of these advantages are as follows:

1. **Any Structure:**

    A Japanese address would not fit into the address structure described in Fig. 2 of the United States Patent No. 5,515,534.

2. **Any Level Match:**

    Two different software systems which have a "Street" data field but have data representation variations: "34 High St Apt 12" vs "Unit 12 34 High Street".

3. **Ambiguous Match:**

    The following address example can match against two different addresses "67 High St Nth Springfield VA 22151", "High St N" in "Springfield" and "High St" in "North Springfield".

4. **Modify subcomponents:**

    A software system has a single high level "Address" data field without a separate postcode field and one particular record has an incorrect

postcode: "21251 High St Springfield VA 21251". The Applicant's innovation can correct the postcode subcomponents to "22151".

It is respectfully submitted that the application, as now claimed, is acceptable and allowable over the art of record.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejections should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Gupta et al. `258 and Chuah et al. 534 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

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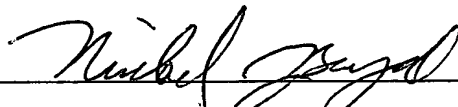Manchester NH 03101-1151
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